**Rocket Nozzle Design Application-Plan**

**Primary Goal:**

**To develop a user-friendly web application that allows users to simulate and understand the basics of rocket nozzle designs.**

**Key Features and Functionality:**

* **Interactive Design Interface:** Users must be able to input nozzle parameters (such as throat diameter, exit diameter, nozzle length).
* **Basic Simulation:** Using fundamental fluid dynamics and thermodynamic properties to simulate nozzle performance displaying results for thrust flow velocity and pressure distribution
* **Educational Content:** Information sections that explain the physics and design parameters of rocket nozzles.
* **User Friendly Graphics:** Graphical representations of nozzle design and simulation results in an accessible manor.
* **Database for Design Storage:** Users can save and retrieve their nozzle designs for comparison and future reference.

**Tech Stack:**

* **Frontend:** HTML, CSS and JavaScript. (React or Vue.js)
* **Backend:** Python with flask or Django
* **Database:** A simple SQL database
* **Libraries:** SciPy and NumPy for scientific calculations and matplotlib or D3.js for data visualization

**Target Audience:**

University students studying aerospace or mechanical engineering.

Amateur rocketry enthusiasts looking to understand nozzle design basics.

**Project Duration:**

Approximately 6 months from initiation to first usable prototype, with interim milestones to measure progress**.**